

Amendments to the Claims

1. (CURRENTLY AMENDED) A display component, for decoding and displaying data coded using a transform having basis functions; comprising:

a plurality of pixels ~~(6)~~ arranged as a block ~~(4)~~;

each pixel ~~(6)~~ including:

a summing element ~~(26)~~;

an first element ~~(22)~~ providing a unit positive contribution to the summing element ;

a first switch ~~(24)~~ connecting the first element to the summing element;

a second element ~~(32)~~ providing a unit negative contribution to the summing element;

a second switch ~~(34)~~ connecting the second element to the summing element;

control circuitry ~~(40)~~ connected to the first and second switches ~~(24, 34)~~ for switching the first and second switches in accordance with basis function values;

the display component further comprising a modulator ~~(62, 94)~~ for modulating all the first and second elements of the pixels of a block ~~(4)~~ in common in accordance with input data, so that the summing element ~~(26)~~ accumulates decoded input data for display in accordance with the input data and the basis function values.

2. (CURRENTLY AMENDED) A display component according to claim 1, wherein:

the summing element ~~(26)~~ is a capacitance, the voltage on the capacitance determining the pixel output;

the first element ~~(22)~~ is a modulated current source for charging the capacitance, and

the second element ~~(32)~~ is a modulated current sink for discharging the capacitance.

3. (CURRENTLY AMENDED) A display component according to claim 2 wherein the current source ~~(22)~~ is a photodiode ~~(60)~~ connected between a high voltage rail ~~(28)~~ and the capacitance ~~(26)~~, the current sink ~~(32)~~ is a photodiode ~~(60)~~ connected between a low voltage rail ~~(38)~~ and the capacitance ~~(26)~~, and the modulator

(62)-includes a light emitting element arranged to transmit an optical signal to the photodiodes (60)-of the block to modulate the photodiodes-(60).

4. (CURRENTLY AMENDED) A display component according to claim 2 wherein the current sources and sinks are transistors (72)-having control terminals (74)-connected through common data lines (96)-to the modulator-(94).

5. (CURRENTLY AMENDED) A display component according to ~~any preceding claim~~claim 1 comprising:

a plurality of the blocks (4)-are arranged in rows (14)-and columns-(12), each row (14)-of blocks having a block select line (66)-for selecting that row of blocks;

wherein the pixel elements (6)-of each row (14)-of blocks (4)-only operate to decode data when selected by the block select line-(66).

6. (CURRENTLY AMENDED) A display component according to claim 5 wherein the pixels comprise a block select switch (82)-connected between the summing element (26) and the first and second switches-(24, 34), the control input of the block select switch (82) being connected to the block select line-(66).

7. (CURRENTLY AMENDED) A display component according to ~~any preceding claim~~claim 1 wherein:

the control circuitry of each pixel has row (42)-and column (44)-basis function inputs;

further comprising:

row basis function lines (102)-connected to the row basis function input (44) of each pixel element of a row of pixel elements of a block; and

column basis function lines (106)-connected to the column basis function input (42)-of each pixel element of a column of pixel elements of a block; and

wherein the at least one basis function generator (18)-generates basis functions for each row and column and outputs the basis functions on respective outputs (100, 104)-connected to respective row and column basis function lines-(102, 106).

8. (CURRENTLY AMENDED) A display component according to claim 7 wherein the control circuitry (40)-has an XOR gate (46)-having the XOR gate inputs

connected to the row and column basis function inputs ~~(42, 44)~~ and the XOR gate output connected to one of the first and second switches ~~(24, 34)~~ directly and the other of the first and second switches ~~(24, 34)~~ through an inverter ~~(48)~~.

9. (CURRENTLY AMENDED) A display component according to ~~any preceding claim~~ claim 1 wherein the basis functions are Walsh basis functions.

10. (CURRENTLY AMENDED) A liquid crystal display, comprising an active plate ~~(2)~~ in the form of a display component according to ~~any preceding claim~~ claim 1, a passive plate ~~(50)~~, and liquid crystal (52) between the active and passive plates.

11. (CURRENTLY AMENDED) A display component according to ~~any of claims 1 to 9~~ claim 1 wherein each pixel element further includes a polymer light emitting diode ~~(92)~~ for emitting light in accordance with the decoded input data on the summing element.

12. (CURRENTLY AMENDED) A method of driving a display having a plurality of a plurality of pixels ~~(6)~~ arranged as a block ~~(4)~~, each pixel ~~(6)~~ including a summing element ~~(26)~~ a first element ~~(22)~~ providing a unit positive contribution to the summing element; a second element ~~(32)~~ providing a unit negative contribution to the summing element; and switches ~~(24, 34)~~ connecting the first and second elements to the summing element, the method including:

accepting an input data stream ~~(30)~~ for the block including a plurality of sequential data items coded using a transform having basis functions;

modulating the first and second elements ~~(22, 32)~~ in common for all pixels of the block in accordance with the input data stream;

switching the switches ~~(24, 34)~~ in each pixel ~~(6)~~ between a state in which the first and second elements ~~(22, 32)~~ are connected to the summing element ~~(26)~~ to add to or subtract from the data accumulated on the summing element and a state in which the first and second element are not connected, the switching taking place sequentially in accordance with a sequence of basis function values for each pixel of the block determined by the location of each pixel within the block; and

displaying a visual output for each pixel in accordance with the data accumulated on the summing element ~~(26)~~.